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VDOT We Keep Virginia Moving

SUMMARY REPORT

Comprehensive Agreement for Interstate Asset Management Services

VMS OPERATIONS 1999-2000

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PURPOSE

The purpose of this document is to summarize the December 2000 report on the significant results of the activities achieved by VMS in managing Virginia's interstate assets from July 1998 through June 2000.

BACKGROUND

In 1995 the Virginia Public-Private Transportation Act (PPTA) became law. This Act allowed interested parties to provide unsolicited proposals for construction, maintenance and operation of transportation facilities.

In accordance with the Act, in December 1996 the Virginia Department of Transportation (VDOT) awarded VMS, Inc. (VMS) a contract for asset management and maintenance of approximately 25% of Virginia's 1,118 miles of interstate highways. This was a fixed price, pilot initiative for an initial period of 5½ years and the first asset management, performance-based contract of its type in the nation.

ACHIEVEMENTS

Through partnering with this Virginia contractor, VDOT continues to develop and define the best possible approaches to evaluation and analysis of the outcomes associated with this approach.

- Fixed price for entire term of the agreement provides guaranteed savings.
- Innovative concepts have been adopted by VDOT and applied to other areas.
- Developed detailed, accurate inventory of the facility components of the Interstate system, which permits achievement of highest standards.
- Lengthened service life of pavements by instituting a systematic crack-sealing program.
- Virginia Tech independent study estimates $8.0 million to $18.7 million in savings over five years.

VMS Staffing and Subcontracting

VMS staff is comprised of senior level management engineers at the Richmond headquarters and operating staff at Petersburg, Chilhowie and Wytheville. VMS management strategy is to use small, independent contractors for nearly all operations.

An aggressive mentoring program by VMS trains new contractors to manage and to prepare bids, and assists them to acquire equipment and bonds, if needed. In 1999 alone, VMS awarded over 140 contracts - more than 90% to Virginia firms.

VMS interstate responsibilities in Virginia

Highway Quality Management System

VMS created a comprehensive computerized asset management tool, which they call Highway Quality Management System (HQMS). This system is based on accurate inventory data for each component of the Interstate roadway including such items as drainage structures, fencing, and signage, in addition to pavements and bridges.

The detailed inventory becomes the basis for the quality control system, which is used by VDOT to control the work of VMS by independently measuring results.

Results of VMS Operations

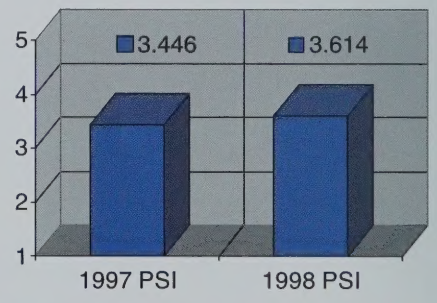
VMS is responsible for maintenance and management of all the assets within the four interstate sections designated by the contract. VMS' custodianship of the interstate pavements has shown an increase in asset serviceability from 1997, when independent pavement ratings by VDOT were taken.

Maintenance assets groups such as traffic, drainage, roadsides, and shoulders have all improved in condition. Independent and objective evaluations of these four asset groups are scored as a Maintenance Rating Program (MRP) value.

Maintenance Performance Outcomes

An analysis of VDOT and VMS pavement rating programs for 1999-2000 has also shown them to be comparable, with average condition values increasing slightly. The Present Serviceability Index (PSI) is a numeric value representing the pavement condition. A three year comparison of asphalt overlays by VDOT in 1994-96 and by VMS in 1998-2000 has revealed comparable outcomes.

Graph A--Overall PSI Averages

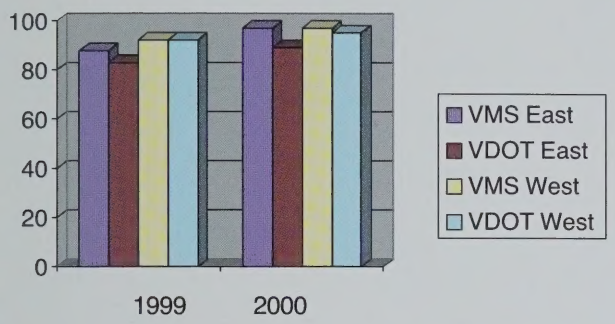


■ **VMS Sections (I-95, I-81, I-77 and I-381)**

In addition, VMS has implemented a number of pavement material innovations, including Roadflex, Novachip, and a crack seal program, that have improved the service life of the interstate highways.

Using National Bridge Inventory data from VDOT's Structure And Bridge Division, VMS has implemented a strategic bridge restorative program on its 403 bridges. General condition ratings for the structures along I-95, I-81, and I-77 have increased.

As part of this program, VMS established a three-phase bridge plan, involving joint repairs, substructure repairs, and steel structure repainting, to improve bridge conditions. These repairs mirror VDOT's preventive maintenance program.



MAINTENANCE RATING PROGRAM VALUES

Safety Management And Traffic Control

Timeliness requirements are intended to ensure that VMS maintains an adequate level of safety for service items that directly impact safety to the traveling public. The timeliness reporting methodology, which began at the start of the contract, reached its final format in May 2000 and now includes specific verifiable information.

VMS has routinely performed full-scale operational "dry runs" for their snow and ice control operations. These dry runs included critiques from all levels of management, including VMS subcontractors, VDOT personnel, and the Virginia State Police. These exercises have been very successful and a tremendous learning experience for all parties involved.

Hurricane Floyd hit I-95 in Virginia in the early morning hours of September 16, 1999. VMS acted swiftly and promptly in responding to the devastating effects of the hurricane and in coordinating with local police authorities, the Virginia National Guard, and North Carolina DOT. VMS also volunteered staff to the VDOT's Emergency Operations Center and participated in coordinating emergency relief efforts.

VMS responded successfully and effectively to more than 1,000 incidents along its interstate corridors between 1998 and 2000. These incidents involved all types of accidents from minor fender benders to major fires and fatalities. In appreciation for VMS' effective and safe responses, the Virginia State Police issued to VMS a letter of commendation.

Quality Evaluation Surveys

To evaluate objectively the effectiveness of VMS' response to emergency incidents, VDOT submitted questionnaires to all nine Virginia State Police units along VMS' interstate corridors. In addition, VDOT submitted surveys to 43 of VMS' subcontractors to evaluate VMS operations and management. All of the State Police surveys were positive and offered only a few comments regarding a safety service patrol along I-77 and more winter chemicals.

The responses from the subcontractors were varied, and offered both pros and cons on VMS operations. Generally, comments were good. Of the 25 subcontractors who responded to the survey, 20 felt that they were given the opportunity to bid in a fair and competitive manner and 20 said they would work with VMS again.

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Costing and Cost Savings

Because this is lump sum, fixed price contract, costs of the program have remained level with no change orders requested despite hurricanes, blizzards, and floods, which have significantly affected several assets in the past two years. Initial cost analysis indicate significant savings are likely within the VMS contract at the work expenditure level.

VDOT requested Virginia Tech to conduct an independent evaluation of the costs and cost savings from this contract. Virginia Tech completed the report, *"Assessment of VDOT's Equivalent Cost for the Highway Maintenance Activities Being Performed by VMS"* on November 30, 2000. Using very conservative assumptions, Virginia Tech concluded that savings were between $8.0 million and $18.7 million over the 5½ years.

Based upon its pre-contract award estimate of about $20 million in savings over the contract, VDOT conducted a study following three years of actual performance using its financial management database. The results of this study indicated that VDOT's costs for maintaining an equivalent number of lane miles averaged slightly higher than the corresponding VMS expenditures.

An important aspect of cost savings that is difficult to quantify is income from third-party claims and savings from cost avoidances such as heavy snow control and hurricane damage recovery.

Bridge strikes by over-height vehicles and sign and guardrail damage from accidents cause significant repairs each year; VMS repairs these as part of the fixed price, but Virginia is permitted to recover costs from insurance companies.

Over the two winter seasons from 1998 to 2000, VMS mobilized for more than double the number of snowstorm events usually experienced; this was accomplished within the scope of services.

In addition when Hurricane Floyd hit I-95 in September 1999, VMS responded with traffic control and repaired almost one million dollars' worth of damages, but did not request any additional funding.

Conclusions

The VDOT-VMS Agreement is in its third full year. Significant progress has been achieved in defining the benefits and drawbacks with a contract of this type. Performance-based contracts measure **results**. This results-oriented process is a new contracting approach for a public agency.

VDOT's innovative contract with VMS has proven the soundness of the new concepts and approaches inherent in a pilot program. The program goals have been met while providing the highest quality of service on Virginia's interstate highways at anticipated levels of cost savings.

For more information

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